

APPENDIX A

SENATE BILL 434

85-2-336. Basin closure — exception. (1) As provided in 85-2-319 and subject to the provisions of subsection (2) of this section, the department may not process or grant an application for a permit to appropriate water within the Upper Clark Fork River basin during the period from May 1, 1991, until June 30, 1995.

(2) The provisions of subsection (1) do not apply to:

(a) an application for a permit to appropriate ground water or water for domestic use; and
(b) an application for a permit to appropriate water to conduct response actions or remedial actions pursuant to the federal Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, or Title 75, chapter 10, part 7. A permit issued to conduct response actions or remedial actions must be limited to a term not to exceed the necessary time to complete the response or remedial action, and the permit may not be transferred to any person for any purpose other than the designated response or remedial action.

(3) Applications for water reservations in the Upper Clark Fork River basin filed pursuant to 85-2-316 and pending as of May 1, 1991, have a priority date of May 1, 1991. Reservation applicants have no standing to object under 85-2-402 during the period of the basin closure provided in subsection (1).

(4) The board may not process or approve applications for reservations of water, except ground water, in the Upper Clark Fork River basin filed pursuant to 85-2-316 during the period of the basin closure provided in subsection (1).

85-2-337. Ground water permit applications — report required. (1) During the period of basin closure provided in 85-2-336(1), an applicant for a ground water permit in the Upper Clark Fork River basin shall submit a report prepared by a professional engineer or hydrologist verifying that the source of the ground water is not a part of or substantially or directly connected to surface water. If the applicant fails to submit the report required in this section, the application is considered defective and must be processed pursuant to 85-2-302.

(2) In addition to the criteria of 85-2-311, the department shall find, based on substantial credible evidence, that the source of the ground water is not a part of or substantially or directly connected to surface water.

85-2-338. Upper Clark Fork River basin steering committee — membership and duties — comprehensive management plan. (1) There is an Upper Clark Fork River basin steering committee. The department director shall appoint the members of the committee, selecting them on the basis of their knowledge of water use, water management, fish, wildlife, recreation, water quality, and water conservation. Representation on the committee must include but is not limited to representatives from affected:

- (a) agricultural organizations;
- (b) conservation districts;
- (c) departments of state government;
- (d) environmental organizations;
- (e) industries;
- (f) local governments;
- (g) reservation applicants;
- (h) utilities; and
- (i) water user organizations.

(2) The steering committee shall complete an Upper Clark Fork River basin comprehensive management plan pursuant to 85-1-203. The plan must:

- (a) consider and balance all beneficial uses of the water in the Upper Clark Fork River basin;
- (b) include a description of the standards applied, the data relied upon, and the methodology used in preparing the plan;
- (c) contain recommendations regarding the Upper Clark Fork River basin closure as provided in 85-2-336;
- (d) identify and make recommendations regarding the resolution of water-related issues in the Upper Clark Fork River basin; and
- (e) include the Blackfoot River, designated as subbasin 76F, and Rock Creek, designated as subbasin 76E, in any considerations made under subsections (2)(a) through (2)(d).

(3) The steering committee shall complete and submit a management plan to the governor and the legislature by December 31, 1994.

APPENDIX B

LIST OF

UPPER CLARK FORK RIVER BASIN STEERING COMMITTEE

PUBLIC MEETINGS

Type	Date	Location
Steering Committee	October 28, 1991	Deer Lodge
	December 9, 1991	"
	January 30, 1992	"
	March 3, 1992	"
	April 15, 1992	"
	May 19, 1992	"
	June 10, 1992	Flint Creek Watershed Tour
	July 23, 1992	Big Blackfoot Watershed Tour
	August 20, 1992	Butte-Anaconda-Georgetown-Silver Lake Tour
	September 19, 1992	Deer Lodge
	October 6, 1992	"
	December 19, 1992	"
	February 4, 1993	"
	March 25, 1993	"
	May 6, 1993	"
	June 10, 1993	"
	August 25, 1993	"
	October 21, 1994	"
	November 22, 1993	"
	December 14, 1993	"
	January 26, 1994	"
	March 1, 1994	"
	May 9, 1994	"
	June 1, 1994	"
	August 3, 1994	"

Type	Date	Location
Steering Committee cont.	September 14, 1994	"
	November 9, 1994	"
	November 19, 1994	"
	December 19, 1994	"
Work Plan	November 10, 1992	Anaconda
	November 12, 1992	Ovando
	November 17, 1992	Drummond
	January 12, 1993	Avon
	January 19, 1993	Philipsburg
	January 21, 1993	Missoula
Basin Closure	October 12, 1993	Deer Lodge
Watershed Committee		
Upper Clark Fork Mainstem & Tributaries	February 3, 1993	Anaconda
	April 7, 1993	"
	May 12, 1993	"
	July 14, 1993	"
	November 10, 1993	"
	March 23, 1994	"
	June 14, 1994	"
Lower Clark Fork	February 18, 1993	Missoula
	March 23, 1993	Drummond
Little Blackfoot	February 16, 1993	Avon
	March 23, 1993	"
	May 18, 1993	"
	June 22, 1993	"
	September 21, 1993	"
	November 16, 1993	"
	January 18, 1994	"
	March 8, 1994	"

Type	Date	Location
Flint Creek	March 2, 1993	Hall
	May 4, 1993	"
	June 1, 1993	"
	August 16, 1993	"
	October 7, 1993	"
	November 9, 1993	"
	February 15, 1994	Philipsburg
	May 3, 1994	Hall
Rock Creek	March 4, 1993	Philipsburg
	May 5, 1993	"
	June 8, 1993	"
	February 9, 1994	"
	April 6, 1994	"
	May 10, 1994	"
Big Blackfoot	February 23, 1993	Ovando
	March 30, 1993	"
	April 29, 1993	"
	May 27, 1993	Potomac
	November 17, 1993	Lubrecht Forestry Station
	November 17, 1993	"
	February 24, 1994	"
	July 27, 1994	"
Draft Plan Public Meetings	September 27, 1994	Drummond
	September 28, 1994	Deer Lodge
	October 4, 1994	Philipsburg
	October 5, 1994	Anaconda
	October 6, 1994	Avon
	October 11, 1994	Greenough
	October 12, 1994	Missoula

APPENDIX C

RETURN FLOW FROM IRRIGATION STABILIZES WATER SOURCES

**Copyrighted by Eugene Manley & William Ohrmann
Drummond, Montana 59832**

There seems to be plenty of controversy between agriculture, and other users of water. Disputes over the de-watering of streams due to irrigation demand are common.

A drought shocks all of us when we see a stream almost dry, however, ranchers and fisherman really want to see the same thing, a stream full of water. Although it may seem hard to believe, water taken from a stream and used for flood irrigation, doesn't necessarily mean less water in the stream. It can actually work to stabilize the flow later in the season. A proven method is in place that tends to solve this serious problem of de-watering, but we must be willing to understand the complicated way in which irrigation water works its way through a basin. In some basins senior water rights holders sometimes forgo their claims for usage of their rights so that junior right users in the upper basin will make usage of that water in early spring. This will recharge the aquifer, start return flows, and insure those senior users of an in-stream flow that will satisfy their needs later in the season. This method of keeping stream flow constant is one that Mother Nature uses, and it is a natural by product of flood irrigation. This water that finds its way back into a stream after being used for flood irrigation is called "return flow".

One must realize that the source of all water in a basin system is Natural Flow water. As water is diverted for irrigation use, some return flows start to develop almost immediately, others develop over varying lengths of time. Over time, and with distance downstream, we find the source of irrigation water changes from natural flow water to return flow waters. At the same time we find this return flow adding up to a greater volume of water than the creek would ever flow naturally, and that flow now furnishes most of the water in the creek. That return flow continues to flow long after the irrigation season is over.

When snow melts or rain falls, Mother Nature tries her best to put some of it underground in the aquifer. Flood irrigation does exactly the same thing and tends to store water just as surely and dependably as a dam. If it were not for this system of storing water in layers of sand, gravel, and bedrock, there would be no springs, rivers or wells. Some areas of the world that receive as much precipitation as we do, but lacking the underground storage we enjoy, are virtual deserts.

Nature in our area only gives about nine to fourteen inches of precipitation a year. It seems reasonable to keep as much of this spring run off in small dams or stored in the land itself, rather than have it rush away to the ocean without an opportunity to have it put to use. With the system of ditches and canals in place, we are able to add a great volume of water to the aquifers. It is not a new thing, it has been going on since the first ditch was dug. It has gone on for so long that it is taken for granted that springs, wells, wetlands and creeks have had, and always will have water. After well over one hundred years of flood irrigation developments creating much of the water for these uses, it is understandable how people would make those assumptions.

To illustrate the above points we only have to look at the Willow Creek In Granite County, where all water available for irrigation is measured into the system, and all water diversions out of the system are also measured. In 1988, the driest year ever in that basin, late in the irrigation season on a particular day there was a measured inflow of one thousand thirty five inches of available water, yet there was a measured diverted outflow of some four thousand one hundred inches of usage. One would certainly ask where that extra three thousand inches of water came from. Most of it came from return flows created by early season flood irrigation, some of it from direct return flow.

In the Flint Creek Basin also in Granite County in that same year some 10,000+ acre feet of water were discharged into the upper basin out of the East Fork Reservoir. This furnished some 60,000 acre feet of usage throughout that basin, once again the difference of some 50,000 acre feet can be accounted for by the use and return of return flows. As in most basins of this State, if one were to tour the basin in late winter before spring run off and again in late June, or early July, a close observation would astound one as to how many formerly dry, or virtual dry watercourses are now flowing water, and how much total water they are flowing, and the contributions they are making to the overall efficiency of the basin's usage of water.

In Flint Creek in 1988, after June 25th, well over 65 percent of the water diverted was return flow. Therefore, it makes sense to find out where those return flows are, what creates them, what the amounts are in different reaches, and knowing all these factors realize how we can fit them into a better management plan for all of the available waters. This is one of the reasons we now have in place a four year study of those return flows in the Flint Creek Basin.

If irrigation methods are altered we will see many changes that will effect us all. Some we won't especially care for, such as a much worse chronic de-watering of streams, and water shortages.

In many areas of the United States, like the Southwest, water is being pumped from ancient underground sources and the water table is lowering ever year. Wells hundreds of feet deep are going ever deeper. We hear how concerned people are trying to figure out a way to divert rivers of the North to these areas, to recharge and stabilize this underground source. The suggested method to recharge these aquifers would be by flooding areas that have proper soils so as to allow this water to percolate to these underground lakes. Flood irrigation on a grand scale!

For many years sprinkler irrigation was recommended as a way to save water. At the time it seemed like a good idea. Use only what the crops actually need and let the rest go down the stream. However this salvaged water was soon being used on new land, was being totally consumed, and wasn't going down stream at all. This of course is what sprinkler irrigation is supposed to do. Since it makes such efficient use of the water it also causes springs to go dry, and also puts an end to return flows.

Supposing in the future all lands were under sprinkler irrigation. One might then ask how things would be. There would be no more underground storage, fewer springs, and just small areas of seepage. We would have very few wetlands, and also some dry household wells. The creeks that we think we see de-watered now would have reaches dry virtually all summer with no chance of recovery, because there would be no return flows for them.

Another very often suggested method of conserving water is the lining of canals and ditches so as to stop water losses that leave those conveyances by seepage. This is an immediate solution that could have dramatic consequences creating more problems than it solves. Among those consequences are the drying up of valuable wetlands, and the simultaneous shut off of strategic return flow patterns that help stabilize a basin system.

Return flow which starts out as water diverted from a stream, irrigates land, is caught again and again and used over and over. Much of it seeps into the aquifer and comes out eventually as springs. Instead of being long gone out of the valley it is stored underground. It too, eventually reaches the ocean, but the good it does an irrigated basin by being stored and released slowly should be recognized as the gift it is.

One hears about developers wanting to drain wetlands, but not many ranchers feel that way about them. Most wetlands on ranches are valued as pasture, and as a source of water that eventually drains back into a creek. One could ask how many of these wetlands would exist if there were no flood irrigation, and the answer would be very few compared to what we now have. We all know of the numerous areas of typical wetlands, consisting of cattail areas, sedges, and small streams that are dry in spring, but get wet as soon as the land above them is irrigated. It is no secret, it happens every spring to thousands of acres in irrigated valleys. Willows and other small trees develop in some of these areas and furnish excellent habitat for all kinds of birds and other forms of wildlife.

If wetlands are important, as we are told, then these people who believe this should wholeheartedly encourage flood irrigation. So should fishermen, sportsmen, hydropower companies, and anyone else interested in seeing stable late summer stream flow, dependable wells and green valleys.

APPENDIX D
CHRONIC AND PERIODIC DEWATERED STREAMS
IN THE UPPER CLARK FORK RIVER BASIN
ABOVE MILLTOWN DAM

CHRONIC DEWATERING

Stream and Reach	Miles Dewatered
<u>Blackfoot River Drainage</u>	
Arrastra Creek	
Stream mile 2.5-2.0	0.5
Blackfoot River	
Seven-up Pete Creek - Poorman Cr	11
Blanchard Creek	2
Chamberlain Creek	0.5
Clearwater River	0.5
Cottonwood Creek	
Stream mile 10.0-4.4	0.5
Gallagher Creek	3
Jefferson Creek	1
Nevada Creek	
Stream mile 40.0-34.0	6
Stream mile 31.7-6.4	20.3
No-Name Creek	0.5
North Fork of Blackfoot River	
River mile 12.0-6.2	0.8
Owl Creek	0.3
Pearson Creek	0.0
Poorman Creek	2
Union Creek	
Stream mile 7.0-0.5	0.5
Wales Creek	0.9
Washington Creek	
Sections 24 and 26	1
Wilson Creek	0.3
Total	80.4
<u>Upper Clark Fork River Drainage</u>	
Bear Creek	
Forks - Clark Fork River	2.2
Blum Creek (Tributary to Gold Creek)	2
Clark Fork River	
Racetrack - Rock Creek	92.7
Cottonwood Creek	
USFS Boundary - mouth	3
Crevice Creek (Tributary to Gold Creek)	2
Dempsey Creek	
N-S Forks - mouth	8.4
Gold Creek	
Pioneer - mouth	0.5
Harvey Creek	0.5

Hoover Creek	
Miller Lake – mouth	5.4
Lost Creek	
State Park – mouth	12
Mill Creek	
BA&P Tracks – Settling Ponds	6.6
Morris Creek	4
Peterson Creek	
USFS Boundary – mouth	10.5
Powell Creek	
Powell Lake – mouth	6.5
Racetrack Creek	
USGS Station – mouth	11.3
Rock Creek	
Rock Creek Lake – mouth	10.9
Storm Lake Creek (Tributary to Warm Spring Creek)	2
Swartz Creek	0.5
Taylor Creek	
Lower Taylor Reservoir – mouth	4.7
Tigh Creek	1
Tin Cup Joe Creek	
Conley's Lake – mouth	5.2
Twin Lakes Creek (Tributary to Warm Spring Creek)	2
Warm Spring Creek	
Hwy 273 – mouth	8
Warm Spring Creek (near Garrison)	
Falls – mouth	5.4
Willow Creek	
Mt. Haggin WMA – Settling Ponds	6.5
Total	224.8

Little Blackfoot Drainage

Carpenter Creek	4.8
Dog Creek	2
Galleger Creek	3
Gimlet Creek	2
Jefferson Creek	1
Little Blackfoot River	
Elliston - mouth	25.5
No Name Creek	0.5
North Trout Creek	5.1
Ophir Creek	4
Sixmile Creek	9
Snowshoe Creek	
USFS Boundary - mouth	6
Spotted Dog Creek	
Private Reservoir - mouth	2.5
Threemile Creek	8
Washington Creek	1
Willson Creek	0.8
Total	75.2

Rock Creek Drainage

Brewster Creek	0.5
North Fork Spring Creek	3
Ranch Creek	1

Ross's Fork	5
South Fork Spring Creek	5
Upper Willow Creek	
USFS Boundary - mouth	74
Total	219

Flint Creek Drainage

Cow Creek	3
Douglas Creek	2
Flint Creek	
Georgetown Lake - mouth	424
Gird Creek	1
Henderson Creek	
USFS Boundary - mouth	4
Lower Willow Creek	
Reservoir - mouth	94
Marshall Creek	
USFS Boundary - mouth	5
Total	638

PERIODIC DEWATERING

Clark Fork River Drainage	
Clark Fork River	
Warm Springs - Racetrack	9
Total	9